REMARKS

In the present Office Action, claims 1 through 12 were examined. Claims 1 and 7 are rejected, claims 2 through 5 are objected to, and claims 6 and 8 through 12 are allowed.

By this Amendment, claims 1 through 4, 6, 7 and 12 have been amended and claims 13 through 16 have been added. Accordingly, claims 1 through 16 are presented for further examination. No new matter has been added. By this Amendment, claims 1 through 16 are believed to be in condition for allowance.

Applicants' invention is drawn to an aqueous solution for depositing an anti-tarnish coating on a metallic surface such as copper and copper alloys. A method for the deposition of that coating is also claimed. As noted in Applicants' specification, prior art anti-tarnish coatings typically include sodium ions such as present from sodium hydroxide or sodium dichromate. When products coated with these prior art anti-tarnish coatings are utilized in electronic packaging, it is believed by some that sodium contamination is associated with die attach failure. Applicants' electrolytic solution has a reduced sodium ion content, when compared to the reference prior art anti-tarnish coatings, and is believed to reduce die attach failure due to sodium contamination. In addition, the adhesion of a polymer to a substrate coated with the anti-tarnish coating of the invention is enhanced. In preferred aspects of the invention, rubidium ions are present in the aqueous solution.

The Examiner objected to Applicants' specification as failing to provide proper antecedent basis to claim 12. Claim 12 recited that the aqueous solution was stabilized to prevent zinc hydroxide precipitation over a period of at least three days. The Examiner identified that the specification recited that stabilization was effective for about four days at page 7, line 27 through page 8, line 1. Claim 12 has been amended to recite that the stabilization is effective for about four days and is now commensurate with the specification. Accordingly, it is respectfully requested that the objection to the specification be removed.

Claim 6 was objected to for containing the expression "applying a current through the item" where the Examiner deemed the words "to the" as superfluous. Applicants have deleted the words from the claim and claim 6 is now believed to have overcome the objection.

Claim 1 was rejected under 35 U.S.C. 102(b) as anticipated by JP55-44536. The Examiner indicated that claims 2 through 5, which depended from claim 1, were objected to as being dependent on a rejected base claim, but would be allowed if rewritten in independent form including all the limitations of the base claim. Claim 2 has been so amended and it is believed that claims 2 through 5 are now in condition for allowance.

Claim 1, as amended, recites that the item coated with the anti-tarnish coating is formed from copper and copper alloys. This is conformance with Applicant's specification at page 1, line 11. JP55-44536 is drawn to a temporary corrosion resistant coating applied to cold rolled steel. The nitrate, sulfate, chloride, oxide, hydroxide or organic compound of one or more of 17 different elements is disclosed to provide temporary corrosion resistance for cold-rolled steel. There is nothing in JP55-44536 to teach or suggest that any of the disclosed compounds have any anti-tarnish benefit for an item formed from a copper or copper alloy. Further, there is nothing in the Japanese reference to cause one skilled in the art to select rubidium hydroxide from the very extensive catalogue of elements provided. As there is nothing in JP55-44536 to teach or suggest the improved anti-tarnish coating achieved from the use of an anti-tarnish coating including rubidium hydroxide, Applicant's claim one should be allowed over the cited reference.

New claims 13-16 correspond to claims 2-5 but depend from claim 1, as amended. As claim 1, as amended, is believed patentable, claims 13-16 should likewise be allowed.

Claim 7 was rejected under 35 U.S.C. 102(b) as anticipated by U.S. 5,098,792. As disclosed in column 4, lines 35-40, of U.S. 5,098,796, the reference solution preferably includes sodium hydroxide and a water soluble hexavalent chromium compound such as sodium dichromate. As disclosed in Applicant's specification at page 5, lines 11-17, the sodium hydroxide based solutions have an acicular morphology. There is nothing in U.S. 5,098,796 to teach or suggest a method for obtaining a flake-like morphology as achieved from Applicant's rubidium hydroxide based solutions. It is respectfully noted that claim 6 asserts the structural limitation of a flake-like morphology and claim 7 is drawn to a coated item where the coating has such a flake-like morphology. There is nothing in the reference to teach or suggest such a coated product and Applicant's claim 7 should be allowed over the cited reference.

Applicants gratefully acknowledge the Examiner's indication that claims 8 through 12 are allowed.

Accordingly, Applicant submits that none of the references, alone or in combination, anticipate or make obvious the invention as presently claimed and that the application is now in condition for allowance. Therefore, Applicant respectfully requests reconsideration and further examination of the application and the Examiner is respectfully requested to take such proper actions so that a patent will issue herefrom as soon as possible.

If the Examiner has any questions or believes that a discussion with Applicant's attorney would expedite prosecution, the Examiner is invited and encouraged to contact the undersigned at the telephone number below.

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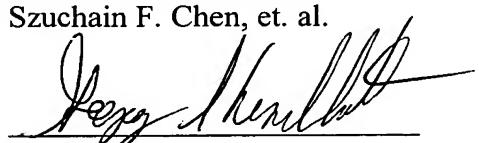
Respectfully submitted,
Szuchain F. Chen, et. al.



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